AMENDMENTS TO THE CLAIMS

1. (original) A method for the demodulation of radio navigation signals (s(t)) transmitted in spread spectrum and comprising a data channel which is modulated by a navigation message and a pilot channel which is not modulated by a navigation message, the data channel and the pilot channel being combined into one multiplexing scheme in order to modulate a carrier, this method consisting in subjecting the signals of the pilot and data channels to despreading processing and in demodulating the despread data signal (r_d) in order to obtain the navigation message $\langle d(t) \rangle$, characterized in that the demodulation of the despread data signal (r_d) used to obtain the navigation message $\langle d(t) \rangle$ is performed with the aid of the carrier (r_p) obtained from the despreading processing of the pilot channel.

- 2. (original) The method as claimed in claim 1, characterized in that the pilot channel and the data channel of the signal to be demodulated are time-multiplexed.
- 3. (original) The method as claimed in claim 1, characterized in that the pilot channel and the data channel of the signal to be demodulated are phase-multiplexed.
- 4. (original) The method as claimed in claim 1, characterized in that the pilot channel and the data channel of the signal to be demodulated are multiplexed in accordance with an ALTBOC scheme.

2

Application No. Not Yet Assigned Docket No.: 4067-000033/US/NP

First Preliminary Amendment dated December 12, 2005

5. (original) The method as claimed in claim 1, characterized in that the pilot

channel and the data channel of the signal to be demodulated are multiplexed in

accordance with a scheme in which the carrier contains at least the data channel and

the pilot channel of the signal to be demodulated.

6. (currently amended) The method as claimed in any of claims 1-to-5 claim 1,

characterized in that the despreading processing is performed by code tracking or

estimation processing, combined with carrier phase or frequency tracking or estimation

processing.

7. (original) The method as claimed in claim 6, characterized in that the carrier

tracking processing is performed with the aid of a frequency-lock loop (FLL) and the

code tracking processing is performed with the aid of a delay-lock loop (DLL).

8. (currently amended) The method as claimed in any of claims 1 to 7 claim 1,

characterized in that it is applied to the demodulation of satellite navigation signals of

the GPS-IIF L5, L2C type, or to the demodulation of satellite navigation signals

transmitted by the GALILEO system, or transmitted by ground stations, by modernized

GLONASS satellites or by COMPASS or QZS satellites.

9. (currently amended) A receiver for radio navigation signals transmitted in spread

spectrum and comprising a data channel which is modulated by a navigation message

and a pilot channel which is not modulated by a navigation message, the receiver

comprising a despreading and tracking device comprising a spreading code generator

3

RMS/smc

First Preliminary Amendment dated December 12, 2005

(23) which supplies spreading codes (E_P, L_P, P_P, E_D, L_D, P_D, NH_data, NH_pilot) and

Docket No.: 4067-000033/US/NP

means (35¹-to 35¹²-and 37¹-to 37¹²) for applying the spreading codes to the signals of

the pilot channel and data channel in order to obtain despread pilot and data signals,

characterized in that it comprises a demodulator which uses the despread pilot signal to

demodulate the despread data signal in order to obtain the navigation message (d).

10. (original) The receiver as claimed in claim 9, characterized in that it comprises

means for estimating or tracking the frequency or phase of the despread pilot channel

signal.

11. (currently amended) The receiver as claimed in claim 10, characterized in that it

comprises a frequency-lock loop (FLL) for tracking the pilot signal and a delay-lock loop

(DLL) which drives the spreading code generator (23).

12. (currently amended) The receiver as claimed in claim 11, characterized in that

the frequency-lock loop (FLL) comprises a discriminator (19) of extended arctangent

form.

13. (currently amended) The receiver as claimed in claim 11-or-12, characterized in

that the frequency-lock loop (FLL) comprises a first-order or second-order loop filter

(20) which is adapted to the dynamics of the received signals.

(currently amended) The receiver as claimed in any of claims 11 to 13 claim 11, 14.

characterized in that the output of the filter (20) of the frequency-lock loop (FLL) is

Application No. Not Yet Assigned

First Preliminary Amendment dated December 12, 2005

coupled to the delay-lock loop (DLL), the delay-lock loop comprising a zero-order loop

Docket No.: 4067-000033/US/NP

filter (22).

15. (currently amended) The receiver as claimed in any of claims 11-to-14,

characterized in that the delay-lock loop (DLL) comprises a discriminator (21) which is

applied to the pilot signals and to the data signals, the data signals being weighted by a

coefficient which depends on the signal-to-noise spectral density ratio (C/N₀) of the

received signals.

16. (currently amended) The receiver as claimed in any of claims 11 to 15 claim 11,

characterized in that the frequency-lock loop (FLL) is designed to receive Doppler

velocity aid from a navigation system (29).

5

RMS/smc